Appendix B

Preliminary Hazard Categorization of the INEEL Operable Unit 3-13 Waste Disposal Complex

1. Project File No.: EDF-ER-226 2. Project/Task: INEEL CERCLA Disposal Facility

3. Subtask: INEEL CERCLA Disposal Complex Preliminary Hazard Categorization

4. Title: Preliminary Hazard Categorization of the INEEL Operable Unit 3-13 Waste Disposal Complex

5. Summary:

The purpose of this document is to present a preliminary hazard categorization of the proposed Operable Unit 3-13 (ICDF) Complex. This complex is to consist of the Staging, Storage, Sizing, and Treatment Facility (SSSTF), the Idaho National Engineering and Environmental Laboratory (INEEL) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Disposal Facility (ICDF), and the evaporation pond. The potential radiological and chemical inventories for the complex are based on sample data histories presented in the updated CERCLA Waste Inventory Database Report for the Operable Unit 3-13 Waste Disposal Complex (Draft). This EDF also supersedes EDF-ER-212 (SSSTF) and EDF-ER-216 (ICDF), which were based on an earlier revision of the sample results database.

6. Distribution (complete package):

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(Minimum reviews and approvals are listed. Additional reviews/approvals may be added.)

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Independent Reviewer	R	R. G. Peatross/Safety Analysis		
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Preliminary Hazard Categorization of the INEEL Operable Unit 3-13 Waste Disposal Complex

SUMMARY

The purpose of this document is to present a preliminary hazard categorization of the proposed Operable Unit 3-13 (ICDF) Complex. This complex is to consist of the Staging, Storage, Sizing, and Treatment Facility (SSSTF), the Idaho National Engineering and Environmental Laboratory (INEEL) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Disposal Facility (ICDF), and the evaporation pond. This evaluation is based on available conceptual complex and process design material and INEEL CERCLA-site soil sample reports presented in the CERCLA Waste Inventory Database Report for the Operable Unit 3-13 Waste Disposal Complex (Draft). This hazard categorization is subject to revision, if necessary, as the design of the complex matures and more definite process information becomes available.

Based on the guidance presented in DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports,* DOE-ID N 420.A1, *Safety Basis Review and Approval Process,* and DOE-EM-STD-5502-94, *Hazard Baseline Documentation*, the preliminary categorization of the proposed complex is Category 3, Nuclear. This categorization is based on the mass of radioactive material, the mass of hazardous material, and the magnitude of hazards, i.e., conservative estimates of waste material quantities that may be present in the complex during operation. (The preliminary categorization of a nuclear facility is based on a comparison of the postulated facility inventory of radiological material, i.e., the mass of radioactive material, to the Category 2 or Category 3 threshold quantities identified in DOE-STD-1027-92.)

It is expected that the accident analysis for the complex will demonstrate that this preliminary hazard categorization may be reduced to Radiological, Low Hazard based on the form of the waste material and the mass and activity of the releasable contaminants. Following that determination, it is expected that this complex may be operated under the administrative control of an auditable safety analysis. Additionally, DOE-EM-STD-5502-94 requires that a health and safety plan be written and implemented because the facility will contain greater than 40 CFR 302.4 reportable quantities of hazardous chemicals.

1. INTRODUCTION

The U.S. Department of Energy Idaho Operations Office (DOE-ID) authorized a remedial design/remedial action (RD/RA) for the Idaho Nuclear Technology and Engineering Center (INTEC) in accordance with the Waste Area Group (WAG) 3, Operable Unit (OU) 3-13 Record of Decision (ROD). The ROD requires CERCLA remediation wastes generated within the INEEL boundaries to be removed and disposed of onsite in the ICDF. The ICDF, which will be located south of INTEC and adjacent to the existing percolation ponds, will be an onsite, engineered facility, meeting Resource Conservation and Recovery Act (RCRA) Subtitle C, DOE Order 435.1, and Toxic Substance Control Act (TSCA) polychlorinated biphenyl (PCB) landfill design and construction requirements. The ICDF will include the necessary subsystems and support facilities to provide a complete waste disposal system.

2. DESCRIPTION

The major components of the ICDF are the disposal cells, an evaporation pond, and the SSSTF. The disposal cells, including a buffer zone, will cover approximately 40°acres, with a disposal capacity of about 510,000 yd^3. Current projections of INEEL-wide CERCLA waste volumes total about 483,800 yd^3. The SSSTF will be designed to provide centralized receiving, inspection, and treatment necessary to stage, store, and treat incoming waste from various INEEL CERCLA remediation sites prior to disposal in the ICDF, or shipment offsite. All SSSTF activities shall take place within the WAG°3 area of contamination to allow flexibility in managing the consolidation and remediation of wastes without triggering Land Disposal Restrictions and other RCRA requirements, in accordance with the OU 3-13 ROD. Only low-level, mixed low-level, hazardous, and limited quantities of TSCA wastes will be treated and/or disposed of at the ICDF. Most of the waste will be contaminated soil, but debris and Investigative Derived Waste (IDW) will also be included in the waste inventory. ICDF leachate, decontamination water and water from CERCLA well purging, sampling, and well development activities will also be disposed in the ICDF evaporation pond.

Only INEEL onsite CERCLA wastes meeting the agency approved Waste Acceptance Criteria (WAC) will be accepted at the ICDF.

3. HAZARDOUS MATERIAL EVALUATION

DOE Order 5480.23, *Nuclear Safety Analysis Reports*, requires that radioactive and chemical materials be inventoried by type and amount. Those quantities of material are then to be evaluated using the guidance presented in DOE-STD-1027-92 and DOE-EM-STD-5502-94 to establish facility or project hazard categorization. For this evaluation of the complex, the inventory of contaminants has been taken from the *CERCLA Waste Inventory Database Report for the Operable Unit 3-13 Waste Disposal Complex*. Due to the many CERCLA remediation site locations and variations in soil contaminant concentrations, the average mass of each contaminant from those locations identified in the database as containing the maximum contaminant mass was considered to be the mass of that contaminant that would be present in the waste. In general, the OU 3-14 Tank Farm Soils have been excluded from this evaluation because, as of this writing, sample data collection has not been completed. However, there are two release sites in the INTEC Tank Farm area from which samples will be collected in order to more accurately estimate the constituent inventories of those sites. They are CPP-28 and CPP-31. The volume of contaminated soil associated with these sites is currently estimated to be between 599 yd^3 and 4930 yd^3 for CPP-28, and 2310 yd^3 and 22,400 yd^3 for CPP-31. IDW from this sample collection activity is estimated to be approximately 39 yd^3 from each site, all of that will be stored in 35-gal drums until the ICDF becomes operational. The estimated inventory of this IDW is addressed in Section 3.3.

The total quantity of waste material that could be present in the complex is estimated to be 510,000 yd^3, with the majority transported directly to the landfill for disposal. The waste may arrive in 13 yd^3 roll-on/roll-off containers and be dumped directly into the landfill. Of that 510,000 yd^3, approximately 36,000 yd^3 of the waste material may be routed through the SSSTF for treatment before transport to the ICDF.

For this evaluation, the total quantity of waste material that could be present in the ICDF is the total 510,000 yd^3 and that in the SSSTF is estimated to be 910 yd^3 in 70 roll-on/roll-off containers. All of the waste material in each facility, i.e., the ICDF or the SSSTF, is considered to be the material at risk (MAR), i.e., is releasable, until more detailed design information becomes available. These waste volumes will be considered as segments of the complex as recommended by DOE-STD-1027-92. Likewise, the drummed IDW is considered as a segment and is addressed in Section 3.3.

Those waste constituents whose estimated quantities exceed either DOE-STD-1027-92 Category 3 threshold quantities or 40 CFR 302.4 reportable quantities are indicated in bold print in Tables 1 through 6.

3.1 Radiological Contaminants

Tables 1 and 2 present the estimated mass for each contaminant from any of the remediation sites, excluding those sites identified as OU 3-14 Tank Farm Soils, that could be present in the ICDF and the SSSTF, respectively. That value is then used as the material at risk, in curies for each contaminant, that is estimated to be present in each facility. Since the estimated capacity of the ICDF is 510,000 yd^3, the entire quantity of each of the radiological contaminants may be disposed and is the quantity presented in Table 1. The quantity presented in Table 2 is the estimated volume of material that could be awaiting processing in the SSSTF, 910 yd^3.

As can be seen from Table 1, six of the DOE-STD-1027-92 threshold quantities have been exceeded when compared to the Category 3 threshold quantities, therefore, the ICDF must be defined as a Category 3, Nuclear Facility. Likewise, it is not necessary to compute the Sum of the Ratios for the reportable quantities taken from 40 CFR 302.4 because comparison of the estimated MAR values to the reportable quantities (RQs) provides a ratio greater than 1 for eleven of the contaminants. On this basis and in accordance with the guidance of DOE-EM-STD-5502-94, the ICDF preliminary categorization is Category 3, Nuclear Facility.

Table 2 indicates that two of the DOE-STD-1027-92 threshold quantities have been exceeded when compared to the Category 3 threshold quantities, therefore, the SSSTF must be defined as a Category 3, Nuclear Facility. Likewise, it is not necessary to compute the Sum of the Ratios for the RQs taken from 40 CFR 302.4 because comparison of the estimated MAR values to the RQs provides a ratio greater than 1 for six of the contaminants. On this basis and in accordance with the guidance of DOE-EM-STD-5502-94, the SSSTF preliminary categorization is Category 3, Nuclear Facility.

None of the radionuclides whose estimated quantities exceed the Category 3 threshold quantities exceed the Category 2 threshold quantities in either facility. Further, all radionuclides whose estimated quantities exceed either the Category 3 threshold quantity or the 40 CFR 302.4 reportable quantity will be evaluated in the safety analysis to determine the final hazard categorization of these facilities and, therefore, that of the complex.

3.2 Chemical Contaminants

It is not required that chemical contaminants be evaluated in the preliminary categorization of a nuclear facility because all facility hazards, including chemical hazards, will be evaluated in a nuclear safety analysis report. However, since it is expected that the accident analysis for the complex will demonstrate that this preliminary hazard categorization may be reduced to Radiological, Low Hazard, the preliminary evaluation of the chemical contaminants has been included for continuity and ease of reference.

Facility inventories of hazardous materials are evaluated in a manner similar to that of radioactive materials except that estimated quantities of hazardous materials are compared to the threshold quantities of 29 CFR 1910.119, or to the levels specified in 40 CFR 355 if not listed in 29 CFR 1910.119. As can be seen from Tables 3 and 4, none of the estimated quantities exceed those listed in either regulation. However, the estimated quantities of the MAR must be further evaluated in that a comparison is to be made between the MAR and the reportable quantities of 40 CFR 302.4 to aid in determining the level of facility safety documentation that must be developed. Again, it is not necessary to calculate the Sum of the Ratios in either Table 3 or Table 4 because there are thirteen contaminants whose ratios exceed 1 in the ICDF inventory and one in the SSSTF inventory. In accordance with DOE-EM-STD-5502-94, a safety analysis must be performed in accordance with the requirements of DOE 5481.1B in which those hazardous materials are evaluated. As with the radionuclides, those hazardous materials whose estimated quantities exceed the 40 CFR 302.4 reportable quantities will be evaluated in the safety analysis to determine the final hazard categorization of this proposed complex.

Based on the comparisons given in Tables 3 and 4 and considering the dispersibility of the MAR, the preliminary hazard categorization of the ICDF and SSSTF complex for hazardous chemicals is Low Hazard.

3.3 Investigation Derived Waste

As stated above, sample data collection from INTEC sites CPP-28 and CPP-31 is estimated to yield approximately 39 yd^3 from each site. This IDW will be stored in 35-gal drums until the ICDF becomes operational then it will be treated and necessary and placed in the landfill. The estimated constituent inventory of this relatively small volume of waste is based on operational histories, process knowledge, and tank sampling data, events that occurred approximately 30 years ago, and is presented in the *CERCLA Waste Inventory Database Report for the Operable Unit 3-13 Waste Disposal Complex* . Many of the isotopic activities presented in the database are extremely low and/or have very short half-lives, therefore, because of the elapsed time, 1.0E-12 curies was chosen as an arbitrary cut-off point. Those isotopes falling below this value were not included in Table 5. Likewise, most of those isotopes having very short half-lives were not included in the Table 5 inventory if the half-life was encountered while the inventory information was being transposed from the database for this report. (It should be noted that the value in the MAR column of Table 5 represents the IDW inventory and not the estimated contaminated volume. This accounts for the apparent discrepancy between the cut-off point and the table.) Table 6 presents the estimates of the chemical inventories of the IDW.

The justifications given in Sections 3.1 and 3.2, above, are applicable to the IDW in that two of the DOE-STD-1027-92 threshold quantities have been exceeded when compared to the Category 3 threshold quantities in Table 5, therefore, this waste material segment must be defined as Category 3, Nuclear. Neither of these radionuclides exceed the Category 2 threshold quantities.

Based on the discussion in Section 3.2, the comparisons given in Table 6, and considering the dispersibility of the MAR, the preliminary hazard categorization of the IDW for hazardous chemicals is Low Hazard.

3.4 Evaporation Pond

Installation of groundwater monitoring wells has been evaluated in previously approved hazard classification documents in which the activity was classified as Not Requiring Additional Safety Analysis because no appreciable quantities of hazardous material or chemicals were identified based on groundwater sampling results. This groundwater monitoring well purge water, and purge water from other similar monitoring wells, will be transported to the evaporation pond and no further analysis is necessary. Although there are some significant concentrations of radioactive contaminants (300 Pci/g) in the perched water samples, they are not high enough to affect the preliminary categorization determination.

Other aqueous waste, such as equipment decontamination water and landfill leachate, will also be transported to the evaporation pond. Since these discharges will be subject to specific waste acceptance criteria for the evaporation pond, which will be developed and submitted to the DOE, State of Idaho, and the EPA for approval, no further analysis is necessary.

3.5 General Hazards

General hazards in the proposed complex, such as high noise levels, inadequate illumination, and working at heights, will be addressed programmatically in the safety analysis and administratively controlled through a specific health and safety plan.

4. CONCLUSIONS

After considering the segments of the proposed Operable Unit 3-13 Waste Disposal Complex, the preliminary hazard categorization of the complex is Category 3, Nuclear in accordance with DOE-STD-1027-92, DOE-EM-STD-5502-94, and DOE-ID 420.A1. This preliminary categorization is based on a comparison of the estimated radiological and chemical contaminant quantities with the associated thresholds and reportable quantities listed in DOE-STD-1027-92, 40 CFR 302, 29 CFR 1910.119, and 40 CFR 355.

Nuclear facilities are required to develop a safety analysis report and, in accordance with DOE-EM-STD-5502-94, a health and safety plan. However, it is expected that the accident analysis for the complex will demonstrate that this preliminary hazard categorization may be reduced to Radiological, Low Hazard based on the form of the waste material and the mass and activity of the releasable contaminants.

Table 1. Radiological Summary - ICDF

Nuclide	Contaminant Mass (Ci)	Waste Volume (yd^3)	MAR (Ci)	Cat 3 TQ (Ci)	Cat 3 TQ Ratio	40 CFR 302.4 RQ (Ci)	40 CFR 302.4 RQ Ratio
Ag-108	1.05E-01	1.11E+04	1.05E-01	2.00E+02	5.25E-04	1.00E+01	1.05E-02
Am-241	3.40E+00	1.25E+04	3.40E+00	5.20E-01	**6.54E+00**	1.00E-02	**3.40E+02**
Co-60	2.49E-01	1.11E+04	2.49E-01	2.80E+02	8.89E-04	1.00E+01	2.49E-02
Cs-134	1.51E-01	1.25E+04	1.51E-01	4.20E+01	3.60E-03	1.00E+00	1.51E-01
Cs-137	2.33E+03	1.25E+04	2.33E+03	6.00E+01	**3.88E+01**	1.00E+00	**2.33E+03**
Eu-152	1.67E-02	1.09E+04	1.67E-02	2.00E+02	8.35E-05	1.00E+01	1.67E-03
Eu-154	5.80E+00	1.25E+04	5.80E+00	2.00E+02	2.90E-02	1.00E+01	5.80E-01
Eu-155	4.88E-04	8.29E+03	4.88E-04	9.40E+02	5.19E-07	1.00E+01	4.88E-05
H-3	3.87E-02	9.93E+04	3.87E-02	1.60E+04	2.42E-06	1.00E+02	3.87E-04
I-129	2.84E-01	9.93E+04	2.84E-01	6.00E-02	**4.73E+00**	1.00E-03	**2.84E+02**
K-40	2.98E-01	1.25E+04	2.98E-01	1.70E+02	1.75E-03	1.00E+00	2.98E-01
Np-237	1.25E-01	9.93E+04	1.25E-01	4.20E-01	2.98E-01	1.00E-02	**1.25E+01**
Pu-238	2.02E+01	1.25E+04	2.02E+01	6.20E-01	**3.26E+01**	1.00E-02	**2.02E+03**
Pu-239	1.69E-03	4.65E+04	1.69E-03	5.20E-01	3.25E-03	1.00E-02	1.69E-01
Pu-239/240	8.86E-01	1.25E+04	8.86E-01	5.20E-01	**1.70E+00**	1.00E-02	**8.86E+01**
Ra-226	1.33E-01	4.65E+04	1.33E-01	1.20E+01	1.11E-02	1.00E+01	1.33E-02
Sb-125	8.65E-03	9.93E+04	8.65E-03	1.20E+02	7.21E-05	1.00E+01	8.65E-04
Sr-90	1.37E+02	1.25E+04	1.37E+02	1.60E+01	**8.56E+00**	1.00E-01	**1.37E+03**
Tc-99	2.56E-01	1.25E+04	2.56E-01	1.70E+03	1.51E-04	1.00E+01	2.56E-02
Th-228	1.34E-02	4.65E+04	1.34E-02	1.00E+00	1.34E-02	1.00E-02	**1.34E+00**
Th-230	6.93E-02	4.65E+04	6.93E-02	6.20E-01	1.12E-01	1.00E-02	**6.93E+00**
Th-230/U-234	3.69E-04	1.31E+02	3.69E-04	6.20E-01	5.95E-04	1.00E-01	3.69E-03
Th-232	6.68E-02	4.65E+04	6.68E-02	1.00E-01	6.68E-01	1.00E-03	**6.68E+01**
U-233/234	7.87E-03	8.29E+03	7.87E-03	4.20E+00	1.87E-03	1.00E-01	7.87E-02
U-234	1.18E-01	9.93E+04	1.18E-01	4.20E+00	2.81E-02	1.00E-01	**1.18E+00**
U-235	7.97E-03	9.93E+04	7.97E-03	4.20E+00	1.90E-03	1.00E-01	7.97E-02
U-235/236	1.14E-02	9.93E+04	1.14E-02	4.20E+00	2.71E-03	1.00E-01	1.14E-01
U-238	9.76E-02	9.93E+04	9.76E-02	4.20E+00	2.32E-02	1.00E-01	9.76E-01

Table 2. Radiological Summary - SSSTF

Nuclide	Contaminant Mass (Ci)	Waste Volume (yd^3)	Concentration (Ci/yd^3)	MAR (Ci)	Cat 3 TQ (Ci)	Cat 3 TQ Ratio	40 CFR 302.4 RQ (Ci)	40 CFR 302.4 RQ Ratio
Ag-108	1.05E-01	1.11E+04	9.45E-06	3.83E-03	2.00E+02	1.91E-05	1.00E+01	3.83E-04
Am-241	3.40E+00	1.25E+04	2.72E-04	1.10E-01	5.20E-01	2.12E-01	1.00E-02	**1.10E+01**
Co-60	2.49E-01	1.11E+04	2.24E-05	9.07E-03	2.80E+02	3.24E-05	1.00E+01	9.07E-04
Cs-134	1.51E-01	1.25E+04	1.21E-05	4.89E-03	4.20E+01	1.16E-04	1.00E+00	4.89E-03
Cs-137	2.33E+03	1.25E+04	1.86E-01	7.54E+01	6.00E+01	**1.26E+00**	1.00E+00	**7.54E+01**
Eu-152	1.67E-02	1.09E+04	1.53E-06	6.18E-04	2.00E+02	3.09E-06	1.00E+01	6.18E-05
Eu-154	5.80E+00	1.25E+04	4.63E-04	1.88E-01	2.00E+02	9.38E-04	1.00E+01	1.88E-02
Eu-155	4.88E-04	8.29E+03	5.89E-08	2.38E-05	9.40E+02	2.54E-08	1.00E+01	2.38E-06
H-3	3.87E-02	9.93E+04	3.90E-07	1.58E-04	1.60E+04	9.87E-09	1.00E+02	1.58E-06
I-129	2.84E-01	9.93E+04	2.86E-06	1.16E-03	6.00E-02	1.93E-02	1.00E-03	**1.16E+00**
K-40	2.98E-01	1.25E+04	2.38E-05	9.64E-03	1.70E+02	5.67E-05	1.00E+00	9.64E-03
Np-237	1.25E-01	9.93E+04	1.26E-06	5.12E-04	4.20E-01	1.22E-03	1.00E-02	5.12E-02
Pu-238	2.02E+01	1.25E+04	1.61E-03	6.54E-01	6.20E-01	**1.05E+00**	1.00E-02	**6.54E+01**
Pu-239	1.69E-03	4.65E+04	3.64E-08	1.47E-05	5.20E-01	2.83E-05	1.00E-02	1.47E-03
Pu-239/240	8.86E-01	1.25E+04	7.08E-05	2.87E-02	5.20E-01	5.51E-02	1.00E-02	**2.87E+00**
Ra-226	1.33E-01	4.65E+04	2.86E-06	1.16E-03	1.20E+01	9.66E-05	1.00E+01	1.16E-04
Sb-125	8.65E-03	9.93E+04	8.71E-08	3.53E-05	1.20E+02	2.94E-07	1.00E+01	3.53E-06
Sr-90	1.37E+02	1.25E+04	1.09E-02	4.43E+00	1.60E+01	2.77E-01	1.00E-01	**4.43E+01**
Tc-99	2.56E-01	1.25E+04	2.05E-05	8.28E-03	1.70E+03	4.87E-06	1.00E+01	8.28E-04
Th-228	1.34E-02	4.65E+04	2.88E-07	1.17E-04	1.00E+00	1.17E-04	1.00E-02	1.17E-02
Th-230	6.93E-02	4.65E+04	1.49E-06	6.04E-04	6.20E-01	9.74E-04	1.00E-02	6.04E-02
Th-230/U-234	3.69E-04	1.31E+02	2.82E-06	1.14E-03	6.20E-01	1.84E-03	1.00E-01	1.14E-02
Th-232	6.68E-02	4.65E+04	1.44E-06	5.82E-04	1.00E-01	5.82E-03	1.00E-03	5.82E-01
U-233/234	7.87E-03	8.29E+03	9.49E-07	3.85E-04	4.20E+00	9.16E-05	1.00E-01	3.85E-03
U-234	1.18E-01	9.93E+04	1.19E-06	4.81E-04	4.20E+00	1.15E-04	1.00E-01	4.81E-03
U-235	7.97E-03	9.93E+04	8.03E-08	3.25E-05	4.20E+00	7.74E-06	1.00E-01	3.25E-04
U-235/236	1.14E-02	9.93E+04	1.15E-07	4.65E-05	4.20E+00	1.11E-05	1.00E-01	4.65E-04
U-238	9.76E-02	9.93E+04	9.83E-07	3.98E-04	4.20E+00	9.48E-05	1.00E-01	3.98E-03

Table 3. Chemical Comparison - ICDF

Chemical	Contaminant Mass (kg)	Waste Volume (yd^3)	MAR (kg)	29 CFR 1910.119 TQ[1] (kg)	Exceed?	40 CFR 355 TPQ[2] (kg)	Exceed?	40 CFR 302.4 RQ[3] (kg)	40 CFR 302.4 Ratio	Exceed?
1,1,1-trichloroethane	7.60E-04	2.01E+04	7.60E-04	not listed	No	not listed	No	4.54E+02	1.67E-06	No
1,1,2-trichloroethane	2.34E-05	1.02E+04	2.34E-05	not listed	No	not listed	No	4.54E+01	5.15E-07	No
1,1-dichloroethane	1.10E-03	1.11E+04	1.10E-03	not listed	No	not listed	No	4.54E+01	2.42E-05	No
1,1-dichloroethene	6.76E-04	1.11E+04	6.76E-04	not listed	No	not listed	No	4.54E+01	1.49E-05	No
1,1,2,2-tetrachloroethane	9.88E-05	1.11E+04	9.88E-05	not listed	No	not listed	No	4.54E+01	2.18E-06	No
1,2,4-trichlorobenzene	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+02	1.19E-05	No
1,2-dichlorobenzene	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+01	1.19E-04	No
1,2-dichloroethane	1.14E-04	8.29E+03	1.14E-04	not listed	No	not listed	No	4.54E+01	2.51E-06	No
1,3-dichlorobenzene	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+01	1.19E-04	No
1,4-dichlorobenzene	1.47E-01	1.11E+04	1.47E-01	not listed	No	not listed	No	4.54E+01	3.24E-03	No
2,4,5-trichlorophenol	1.29E-02	1.02E+04	1.29E-02	not listed	No	not listed	No	4.54E+00	2.84E-03	No
2,4,6-trichlorophenol	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+00	1.19E-03	No
2,4-dichlorophenol	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+01	1.19E-04	No
2,4-dimethylphenol	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+01	1.19E-04	No
2,4-dinitrophenol	1.29E-02	1.02E+04	1.29E-02	not listed	No	not listed	No	4.54E+00	2.84E-03	No
2,4-dinitrotoluene	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+00	1.19E-03	No
2,6-dinitrotoluene	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+01	1.19E-04	No
2-butanone	3.09E-03	2.01E+04	3.09E-03	not listed	No	not listed	No	2.27E+03	1.36E-06	No
2-chloronaphthalene	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	2.27E+03	2.37E-06	No
2-chlorophenol	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+01	1.19E-04	No
2-hexanone	4.37E-04	2.01E+04	4.37E-04	not listed	No	not listed	No	2.27E+03	1.93E-07	No
2-methylnaphthalene	2.10E-01	2.01E+04	2.10E-01	not listed	No	not listed	No	N/A		No
2-methylphenol	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	N/A		No
2-nitroaniline	1.29E-02	1.02E+04	1.29E-02	2.27E+03	No	not listed	No	N/A		No
2-nitrophenol	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+01	1.19E-04	No
3,3'-dichlorobenzidine	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E-01	1.19E-02	No
3-methyl butanal	1.06E-05	1.11E+04	1.06E-05	not listed	No	not listed	No	N/A		No
3-nitroaniline	1.29E-02	1.02E+04	1.29E-02	2.27E+03	No	not listed	No	N/A		No
4,6-dinitro-2-methylphenol	1.29E-02	1.02E+04	1.29E-02	not listed	No	not listed	No	N/A		No
4-bromophenyl-phenylether	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	N/A		No
4-chloro-3-methylphenol	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+01	1.19E-04	No
4-chloroaniline	1.10E-02	1.11E+04	1.10E-02	not listed	No	not listed	No	N/A		No
4-chlorophenyl-phenylether	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+02	2.42E-05	No
4-methyl-2-pentanone	1.45E-03	2.01E+04	1.45E-03	not listed	No	not listed	No	2.27E+03	2.37E-06	No
4-methylphenol	9.63E-03	1.11E+04	9.63E-03	not listed	No	not listed	No	2.27E+03	6.39E-07	No
4-nitroaniline	1.29E-02	1.02E+04	1.29E-02	2.27E+03	No	not listed	No	N/A		No
4-nitrophenol	1.29E-02	1.02E+04	1.29E-02	not listed	No	not listed	No	2.27E+03	5.68E-06	No
acenaphthene	3.91E-02	2.01E+04	3.91E-02	not listed	No	not listed	No	4.54E+01	2.84E-04	No
acenaphthylene	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+01	8.61E-04	No
								2.27E+03	2.37E-06	No

Table 3. Chemical Comparison - ICDF (cont d)

Chemical	Contaminant Mass (kg)	Waste Volume (yd^3)	MAR (kg)	29 CFR 1910.119 TQ[1] (kg)	Exceed?	40 CFR 355 TPQ[2] (kg)	Exceed?	40 CFR 302.4 RQ[3] (kg)	40 CFR 302.4 Ratio	Exceed?
acetone	4.84E-02	2.01E+04	4.84E-02	not listed	No	not listed	No	2.27E+03	2.13E-05	No
aldol condensate	6.41E-02	9.93E+04	6.41E-02	not listed	No	not listed	No	N/A		No
alkane	8.08E-02	9.93E+04	8.08E-02	not listed	No	not listed	No	N/A		No
aluminum	4.80E+05	9.93E+04	4.80E+05	not listed	No	not listed	No	N/A		No
anthracene	6.76E-02	1.11E+04	6.76E-02	not listed	No	not listed	No	2.27E+03	2.98E-05	No
antimony	4.55E+02	1.11E+04	4.55E+02	not listed	No	not listed	No	2.27E+03	2.00E-01	No
Aroclor-1016	1.46E-03	8.29E+03	1.46E-03	not listed	No	not listed	No	4.54E-01	3.22E-03	No
Aroclor-1254	2.70E-02	1.02E+05	2.70E-02	not listed	No	not listed	No	4.54E-01	5.95E-02	No
Aroclor-1260	6.46E-02	1.11E+04	6.46E-02	not listed	No	not listed	No	4.54E-01	1.42E-01	No
Aroclor-1268	1.47E-02	1.11E+04	1.47E-02	not listed	No	not listed	No	4.54E-01	3.24E-02	No
arsenic	5.58E+02	1.11E+04	5.58E+02	not listed	No	not listed	No	4.54E-01	**1.23E+03**	**Yes**
barium	2.63E+04	9.93E+04	2.63E+04	not listed	No	not listed	No	4.54E+02	**5.79E+01**	**Yes**
benzene	1.19E-02	1.11E+04	1.19E-02	not listed	No	not listed	No	4.54E+00	2.62E-03	No
benzo(a)anthracene	1.91E-02	1.11E+04	1.91E-02	not listed	No	not listed	No	4.54E+00	4.21E-03	No
benzo(a)pyrene	1.71E-02	9.93E+04	1.71E-02	not listed	No	not listed	No	4.54E-01	3.77E-02	No
benzo(b)fluoranthene	2.55E-02	1.11E+04	2.55E-02	not listed	No	not listed	No	4.54E-01	5.62E-02	No
benzo(g,h,i,)perylene	1.01E-02	1.11E+04	1.01E-02	not listed	No	not listed	No	2.27E+03	4.45E-06	No
benzo(k)fluoranthene	1.71E-02	9.93E+04	1.71E-02	not listed	No	not listed	No	2.27E+03	7.53E-06	No
benzoic acid	3.17E-03	1.11E+04	3.17E-03	not listed	No	not listed	No	2.27E+03	1.40E-06	No
beryllium	3.42E+01	9.93E+04	3.42E+01	not listed	No	not listed	No	4.54E+00	**7.53E+00**	**Yes**
bis(2-chloroethoxy)methane	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+02	1.19E-05	No
bis(2-chloroethyl)ether	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+00	1.19E-03	No
bis(2-chloroisopropyl)ether	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	N/A		No
bis(2-ethylhexyl)phthalate	2.82E-02	1.11E+04	2.82E-02	not listed	No	not listed	No	4.54E+01	6.21E-04	No
boron	2.82E+03	1.11E+04	2.82E+03	not listed	No	not listed	No	N/A		No
bromacil	1.14E-02	9.93E+04	1.14E-02	not listed	No	not listed	No	N/A		No
butane,1,1,3,4-tetrachloro	3.71E-03	8.29E+03	3.71E-03	not listed	No	not listed	No	N/A		No
butylbenzylphthalate	2.68E-02	1.11E+04	2.68E-02	not listed	No	not listed	No	4.54E+01	5.90E-04	No
cadmium	5.18E-01	9.93E+04	5.18E-01	not listed	No	not listed	No	4.54E+00	1.14E-01	No
calcium	1.40E+06	9.93E+04	1.40E+06	not listed	No	not listed	No	N/A		No
carbazole	5.39E-04	1.02E+04	5.39E-04	not listed	No	not listed	No	N/A		No
carbon disulfide	8.39E-04	1.11E+04	8.39E-04	not listed	No	4.54E+03	No	4.54E+02	1.85E-06	No
chloride	7.81E-01	2.96E+02	7.81E-01	not listed	No	not listed	No	N/A		No
chlorobenzene	4.76E-04	1.11E+04	4.76E-04	not listed	No	not listed	No	4.54E+01	1.05E-05	No
chloroethane	1.33E-03	8.89E+01	1.33E-03	not listed	No	not listed	No	4.54E+01	2.93E-05	No
chloromethane	9.56E-04	9.93E+04	9.56E-04	not listed	No	not listed	No	4.54E+01	2.11E-05	No
chromium	5.41E+03	9.93E+04	5.41E+03	not listed	No	not listed	No	2.27E+03	**2.38E+00**	**Yes**
chrysene	2.04E-02	1.11E+04	2.04E-02	not listed	No	not listed	No	4.54E+01	4.49E-04	No
cobalt	1.76E+02	2.74E+04	1.76E+02	not listed	No	not listed	No	N/A		No

Table 3. Chemical Comparison - ICDF (cont d)

Chemical	Contaminant Mass (kg)	Waste Volume (yd^3)	MAR (kg)	29 CFR 1910.119 TQ[1] (kg)	Exceed?	40 CFR 355 TPQ[2] (kg)	Exceed?	40 CFR 302.4 RQ[3] (kg)	40 CFR 302.4 Ratio	Exceed?
copper	8.82E+02	1.11E+04	8.82E+02	not listed	No	not listed	No	2.27E+03	3.89E-01	No
cyanide	3.06E+01	1.11E+04	3.06E+01	not listed	No	not listed	No	4.54E+00	**6.74E+00**	**Yes**
decane,3,4-dimethyl	7.65E-05	1.11E+04	7.65E-05	not listed	No	not listed	No	N/A		No
diacetone alcohol	7.35E-01	8.29E+03	7.35E-01	not listed	No	not listed	No	N/A		No
di-n-butylphthalate	3.06E-03	1.02E+04	3.06E-03	not listed	No	not listed	No	4.54E+00	6.74E-04	No
di-n-octylphthalate	3.36E-03	1.11E+04	3.36E-03	not listed	No	not listed	No	2.27E+03	1.48E-06	No
dibenz(a,h,)anthracene	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E-01	1.19E-02	No
dibenzofuran	8.63E-02	2.01E+04	8.63E-02	not listed	No	not listed	No	4.54E+01	1.90E-03	No
diethylphthalate	2.86E-03	1.02E+04	2.86E-03	not listed	No	not listed	No	4.54E+02	6.30E-06	No
dimethyl disulfide	5.61E-04	1.11E+04	5.61E-04	not listed	No	not listed	No	N/A		No
dimethylphthalate	5.39E-04	1.02E+04	5.39E-04	not listed	No	not listed	No	2.27E+03	2.37E-07	No
eicosane	1.33E-04	8.29E+03	1.33E-04	not listed	No	not listed	No	N/A		No
ethylbenzene	3.12E-02	1.11E+04	3.12E-02	not listed	No	not listed	No	4.54E+02	6.87E-05	No
fluoranthene	8.80E-02	1.11E+04	8.80E-02	not listed	No	not listed	No	4.54E+01	1.94E-03	No
fluorene	6.25E-02	1.11E+04	6.25E-02	not listed	No	not listed	No	N/A		No
fluoride	8.59E+01	2.96E+02	8.59E+01	not listed	No	not listed	No	N/A		No
heptadecane,2,6,10,15-tatra	1.62E-03	8.29E+03	1.62E-03	not listed	No	not listed	No	N/A		No
hexachlorobenzene	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+00	1.19E-03	No
hexachlorobutadiene	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E-01	1.19E-02	No
hexachlorocyclopentadiene	5.39E-03	1.02E+04	5.39E-03	not listed	No	4.54E+01	No	4.54E+00	1.19E-03	No
hexachloroethane	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+01	1.19E-04	No
indeno(1,2,3-cd)pyrene	9.33E-03	9.93E+04	9.33E-03	not listed	No	not listed	No	4.54E+01	2.06E-04	No
iron	1.03E+06	9.93E+04	1.03E+06	not listed	No	not listed	No	N/A		No
isophorone	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	2.27E+03	2.37E-06	No
isopropyl alcohol/2-propanol	1.00E-03	1.25E+04	1.00E-03	not listed	No	not listed	No	N/A		No
kepone	2.76E-02	1.02E+05	2.76E-02	not listed	No	not listed	No	4.54E-01	6.08E-02	No
lead	5.45E+03	2.01E+04	5.45E+03	not listed	No	not listed	No	4.54E+00	**1.20E+03**	**Yes**
magnesium	3.85E+05	9.93E+04	3.85E+05	not listed	No	not listed	No	N/A		No
manganese	1.88E+04	9.93E+04	1.88E+04	not listed	No	not listed	No	N/A		No
mercury	1.38E+03	9.93E+04	1.38E+03	not listed	No	not listed	No	4.54E-01	**3.04E+03**	**Yes**
mesityl oxide	9.65E-03	8.29E+03	9.65E-03	not listed	No	not listed	No	N/A		No
methyl acetate	1.85E-04	1.11E+04	1.85E-04	not listed	No	not listed	No	N/A		No
methylene chloride	1.41E-02	1.02E+05	1.41E-02	not listed	No	not listed	No	4.54E+02	3.11E-05	No
molybdenum	1.55E+02	1.11E+04	1.55E+02	not listed	No	not listed	No	N/A		No
n-nitroso-di-n-propylamine	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	N/A		No
n-nitrosodiphenylamine	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+01	1.19E-04	No
naphthalene	1.34E-01	2.01E+04	1.34E-01	not listed	No	not listed	No	4.54E+01	2.95E-03	No
nickel	1.86E+03	9.93E+04	1.86E+03	not listed	No	not listed	No	4.54E+01	**4.10E+01**	**Yes**

Table 3. Chemical Comparison - ICDF (cont d)

Chemical	Contaminant Mass (kg)	Waste Volume (yd^3)	MAR (kg)	29 CFR 1910.119 TQ[1] (kg)	Exceed?	40 CFR 355 TPQ[2] (kg)	Exceed?	40 CFR 302.4 RQ[3] (kg)	40 CFR 302.4 Ratio	Exceed?
nitrate	6.34E+01	1.25E+04	6.34E+01	not listed	No	not listed	No	N/A		No
nitrate/nitrite-n	2.87E+01	2.67E+03	2.87E+01	not listed	No	not listed	No	N/A		No
nitrite	3.34E+00	1.25E+04	3.34E+00	not listed	No	not listed	No	N/A		No
nitrobenzene	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	4.54E+02	1.19E-05	No
octane,2,3,7-trimethyl	7.65E-05	1.11E+04	7.65E-05	not listed	No	not listed	No	N/A		No
o-toluenesulfonamide	2.38E-03	8.29E+03	2.38E-03	not listed	No	not listed	No	N/A		No
PCB	1.73E-03	8.29E+03	1.73E-03	not listed	No	not listed	No	4.54E-01	3.79E-03	No
pentachlorophenol	1.29E-02	1.02E+04	1.29E-02	not listed	No	not listed	No	4.54E+00	2.84E-03	No
phenanthrene	2.04E-01	1.11E+04	2.04E-01	not listed	No	not listed	No	2.27E+03	8.99E-05	No
phenol	1.60E-02	1.11E+04	1.60E-02	not listed	No	4.54E+03	No	4.54E+02	3.52E-05	No
phenol,2,6-bis(1,1-dimethyl)	1.73E-03	8.29E+03	1.73E-03	not listed	No	not listed	No	N/A		No
potassium	7.68E+04	9.93E+04	7.68E+04	not listed	No	not listed	No	N/A		No
pyrene	8.16E-02	1.11E+04	8.16E-02	not listed	No	4.54E+03	No	2.27E+03	3.59E-05	No
selenium	7.51E+01	9.93E+04	7.51E+01	not listed	No	not listed	No	4.54E+01	**1.65E+00**	**Yes**
silver	1.44E+03	9.93E+04	1.44E+03	not listed	No	not listed	No	4.54E+02	**3.17E+00**	**Yes**
sodium	1.97E+04	9.93E+04	1.97E+04	not listed	No	not listed	No	4.54E+00	**4.34E+03**	**Yes**
strontium	1.12E+03	1.11E+04	1.12E+03	not listed	No	not listed	No	N/A		No
sulfate	8.57E+00	2.96E+02	8.57E+00	not listed	No	not listed	No	N/A		No
sulfide	3.06E+05	1.11E+04	3.06E+05	not listed	No	not listed	No	N/A		No
TPH-diesel	1.24E+02	1.11E+04	1.24E+02	not listed	No	not listed	No	N/A		No
tetrachloroethene	3.65E-04	1.11E+04	3.65E-04	not listed	No	not listed	No	4.54E+01	8.04E-06	No
thallium	7.44E+01	1.11E+04	7.44E+01	not listed	No	not listed	No	4.54E+02	1.64E-01	No
toluene	1.06E-01	1.11E+04	1.06E-01	not listed	No	not listed	No	4.54E+02	2.33E-04	No
tributylphosphate	5.39E-03	1.02E+04	5.39E-03	not listed	No	not listed	No	N/A		No
trichloroethene	3.36E-03	2.01E+04	3.36E-03	not listed	No	not listed	No	4.54E+01	7.40E-05	No
undecane,4,6-dimethyl	7.65E-05	1.11E+04	7.65E-05	not listed	No	not listed	No	N/A		No
vanadium	2.14E+03	9.93E+04	2.14E+03	not listed	No	not listed	No	4.54E+02	**4.71E+00**	**Yes**
zinc	1.90E+04	1.11E+04	1.90E+04	not listed	No	not listed	No	4.54E+02	**4.19E+01**	**Yes**
zirconium	1.34E+03	1.11E+04	1.34E+03	not listed	No	not listed	No	N/A		No

1. TQ = Threshold Quantity
2. TPQ = Threshold Planning Quantity
3. RQ = Reportable Quantity

Table 4. Chemical Comparison - SSSTF

Chemical	Contaminant Mass (kg)	Waste Volume (m^3)	MAR (kg)	29 CFR 1910.119 TQ[1] (kg)	Exceed?	40 CFR 355 TPQ[2] (kg)	Exceed?	40 CFR 302.4 RQ[3] (kg)	40 CFR 302.4 Ratio	Exceed?
1,1,1-trichloroethane	7.60E-04	2.01E+04	3.78E-08	not listed	No	not listed	No	4.54E+02	3.78E-08	No
1,1,2-trichloroethane	2.34E-05	1.02E+04	2.29E-09	not listed	No	not listed	No	4.54E+01	2.29E-09	No
1,1-dichloroethane	1.10E-03	1.11E+04	9.91E-08	not listed	No	not listed	No	4.54E+01	9.91E-08	No
1,1-dichloroethene	6.76E-04	1.11E+04	6.09E-08	not listed	No	not listed	No	4.54E+01	6.09E-08	No
1,1,2,2-tetrachloroethane	9.88E-05	1.11E+04	8.90E-09	not listed	No	not listed	No	4.54E+01	8.90E-09	No
1,2,4-trichlorobenzene	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+02	5.28E-07	No
1,2-dichlorobenzene	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+01	5.28E-07	No
1,2-dichloroethane	1.14E-04	8.29E+03	1.38E-08	not listed	No	not listed	No	4.54E+01	1.38E-08	No
1,3-dichlorobenzene	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+01	5.28E-07	No
1,4-dichlorobenzene	1.47E-01	1.11E+04	1.32E-05	not listed	No	not listed	No	4.54E+01	1.32E-05	No
2,4,5-trichlorophenol	1.29E-02	1.02E+04	1.26E-06	not listed	No	not listed	No	4.54E+00	1.26E-06	No
2,4,6-trichlorophenol	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+00	5.28E-07	No
2,4-dichlorophenol	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+01	5.28E-07	No
2,4-dimethylphenol	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+01	5.28E-07	No
2,4-dinitrophenol	1.29E-02	1.02E+04	1.26E-06	not listed	No	not listed	No	4.54E+00	1.26E-06	No
2,4-dinitrotoluene	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+00	5.28E-07	No
2,6-dinitrotoluene	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+01	5.28E-07	No
2-butanone	3.09E-03	2.01E+04	1.54E-07	not listed	No	not listed	No	2.27E+03	1.54E-07	No
2-chloronaphthalene	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	2.27E+03	5.28E-07	No
2-chlorophenol	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+01	5.28E-07	No
2-hexanone	4.37E-04	2.01E+04	2.17E-08	not listed	No	not listed	No	2.27E+03	2.17E-08	No
2-methylnaphthalene	2.10E-01	2.01E+04	1.04E-05	not listed	No	not listed	No	N/A		No
2-methylphenol	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	N/A		No
2-nitroaniline	1.29E-02	1.02E+04	1.26E-06	2.27E+03	No	not listed	No	N/A		No
2-nitrophenol	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+01	5.28E-07	No
3,3'-dichlorobenzidine	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E-01	5.28E-07	No
3-methyl butanal	1.06E-05	1.11E+04	9.55E-10	not listed	No	not listed	No	N/A		No
3-nitroaniline	1.29E-02	1.02E+04	1.26E-06	2.27E+03	No	not listed	No	N/A		No
4,6-dinitro-2-methylphenol	1.29E-02	1.02E+04	1.26E-06	not listed	No	not listed	No	N/A		No
4-bromophenyl-phenylether	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+01	5.28E-07	No
4-chloro-3-methylphenol	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	N/A		No
4-chloroaniline	1.10E-02	1.11E+04	9.91E-07	not listed	No	not listed	No	4.54E+02	9.91E-07	No
4-chlorophenyl-phenylether	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	2.27E+03	5.28E-07	No
4-methyl-2-pentanone	1.45E-03	2.01E+04	7.21E-08	not listed	No	not listed	No	2.27E+03	7.21E-08	No
4-methylphenol	9.63E-03	1.11E+04	8.68E-07	not listed	No	not listed	No	N/A		No
4-nitroaniline	1.29E-02	1.02E+04	1.26E-06	2.27E+03	No	not listed	No	2.27E+03	1.26E-06	No
4-nitrophenol	1.29E-02	1.02E+04	1.26E-06	not listed	No	not listed	No	4.54E+01	1.26E-06	No
acenaphthene	3.91E-02	2.01E+04	1.95E-06	not listed	No	not listed	No	4.54E+01	1.95E-06	No
acenaphthylene	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	2.27E+03	5.28E-07	No

Table 4. Chemical Comparison - SSSTF (cont d)

Chemical	Contaminant Mass (kg)	Waste Volume (m^3)	MAR (kg)	29 CFR 1910.119 TQ[1] (kg)	Exceed?	40 CFR 355 TPQ[2] (kg)	Exceed?	40 CFR 302.4 RQ[3] (kg)	40 CFR 302.4 Ratio	Exceed?
acetone	4.84E-02	2.01E+04	2.41E-06	not listed	No	not listed	No	2.27E+03	2.41E-06	No
aldol condensate	6.41E-02	9.93E+04	6.46E-07	not listed	No	not listed	No	N/A		No
alkane	8.08E-02	9.93E+04	8.14E-07	not listed	No	not listed	No	N/A		No
aluminum	4.80E+05	9.93E+04	4.83E+00	not listed	No	not listed	No	N/A		No
anthracene	6.76E-02	1.11E+04	6.09E-06	not listed	No	not listed	No	2.27E+03	6.09E-06	No
antimony	4.55E+02	1.11E+04	4.10E-02	not listed	No	not listed	No	2.27E+03	4.10E-02	No
Aroclor-1016	1.46E-03	8.29E+03	1.76E-07	not listed	No	not listed	No	4.54E-01	1.76E-07	No
Aroclor-1254	2.70E-02	1.02E+05	2.65E-07	not listed	No	not listed	No	4.54E-01	2.65E-07	No
Aroclor-1260	6.46E-02	1.11E+04	5.82E-06	not listed	No	not listed	No	4.54E-01	5.82E-06	No
Aroclor-1268	1.47E-02	1.11E+04	1.32E-06	not listed	No	not listed	No	4.54E-01	1.32E-06	No
arsenic	5.58E+02	1.11E+04	5.03E-02	not listed	No	not listed	No	4.54E-01	5.03E-02	No
barium	2.63E+04	9.93E+04	2.65E-01	not listed	No	not listed	No	4.54E+02	2.65E-01	No
benzene	1.19E-02	1.11E+04	1.07E-06	not listed	No	not listed	No	4.54E+00	1.07E-06	No
benzo(a)anthracene	1.91E-02	1.11E+04	1.72E-06	not listed	No	not listed	No	4.54E+00	1.72E-06	No
benzo(a)pyrene	1.71E-02	9.93E+04	1.72E-07	not listed	No	not listed	No	4.54E-01	1.72E-07	No
benzo(b)fluoranthene	2.55E-02	1.11E+04	2.30E-06	not listed	No	not listed	No	4.54E-01	2.30E-06	No
benzo(g,h,i,)perylene	1.01E-02	1.11E+04	9.10E-07	not listed	No	not listed	No	2.27E+03	9.10E-07	No
benzo(k)fluoranthene	1.71E-02	9.93E+04	1.72E-07	not listed	No	not listed	No	2.27E+03	1.72E-07	No
benzoic acid	3.17E-03	1.11E+04	2.86E-07	not listed	No	not listed	No	2.27E+03	2.86E-07	No
beryllium	3.42E+01	9.93E+04	3.44E-04	not listed	No	not listed	No	4.54E+00	3.44E-04	No
bis(2-chloroethoxy)methane	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+02	5.28E-07	No
bis(2-chloroethyl)ether	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+00	5.28E-07	No
bis(2-chloroisopropyl)ether	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	N/A		No
bis(2-ethylhexyl)phthalate	2.82E-02	1.11E+04	2.54E-06	not listed	No	not listed	No	4.54E+01	2.54E-06	No
boron	2.82E+03	1.11E+04	2.54E-01	not listed	No	not listed	No	N/A		No
bromacil	1.14E-02	9.93E+04	1.15E-07	not listed	No	not listed	No	N/A		No
butane,1,1,3,4-tetrachloro	3.71E-03	8.29E+03	4.48E-07	not listed	No	not listed	No	N/A		No
butylbenzylphthalate	2.68E-02	1.11E+04	2.41E-06	not listed	No	not listed	No	4.54E+01	2.41E-06	No
cadmium	5.18E-01	9.93E+04	5.22E-06	not listed	No	not listed	No	4.54E+00	5.22E-06	No
calcium	1.40E+06	9.93E+04	1.41E+01	not listed	No	not listed	No	N/A		No
carbazole	5.39E-04	1.02E+04	5.28E-08	not listed	No	not listed	No	N/A		No
carbon disulfide	8.39E-04	1.11E+04	7.56E-08	not listed	No	4.54E+03	No	4.54E+02	7.56E-08	No
chloride	7.81E-01	2.96E+02	2.64E-03	not listed	No	not listed	No	N/A		No
chlorobenzene	4.76E-04	1.11E+04	4.29E-08	not listed	No	not listed	No	4.54E+01	4.29E-08	No
chloroethane	1.33E-03	8.89E+01	1.50E-05	not listed	No	not listed	No	4.54E+01	1.50E-05	No
chloromethane	9.56E-04	9.93E+04	9.63E-09	not listed	No	not listed	No	4.54E+01	9.63E-09	No
chromium	5.41E+03	9.93E+04	5.45E-02	not listed	No	not listed	No	2.27E+03	5.45E-02	No
chrysene	2.04E-02	1.11E+04	1.84E-06	not listed	No	not listed	No	4.54E+01	1.84E-06	No
cobalt	1.76E+02	2.74E+04	6.42E-03	not listed	No	not listed	No	N/A		No

Table 4. Chemical Comparison - SSSTF (cont d)

Chemical	Contaminant Mass (kg)	Waste Volume (m^3)	MAR (kg)	29 CFR 1910.119 TQ[1] (kg)	Exceed?	40 CFR 355 TPQ[2] (kg)	Exceed?	40 CFR 302.4 RQ[3] (kg)	40 CFR 302.4 Ratio	Exceed?
copper	8.82E+02	1.11E+04	7.95E-02	not listed	No	not listed	No	2.27E+03	7.95E-02	No
cyanide	3.06E+01	1.11E+04	2.76E-03	not listed	No	not listed	No	4.54E+00	2.76E-03	No
decane,3,4-dimethyl	7.65E-05	1.11E+04	6.89E-09	not listed	No	not listed	No	N/A		No
diacetone alcohol	7.35E-01	8.29E+03	8.87E-05	not listed	No	not listed	No	N/A		No
di-n-butylphthalate	3.06E-03	1.02E+04	3.00E-07	not listed	No	not listed	No	4.54E+00	3.00E-07	No
di-n-octylphthalate	3.36E-03	1.11E+04	3.03E-07	not listed	No	not listed	No	2.27E+03	3.03E-07	No
dibenz(a,h,)anthracene	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E-01	5.28E-07	No
dibenzofuran	8.63E-02	2.01E+04	4.29E-06	not listed	No	not listed	No	4.54E+01	4.29E-06	No
diethylphthalate	2.86E-03	1.02E+04	2.80E-07	not listed	No	not listed	No	4.54E+02	2.80E-07	No
dimethyl disulfide	5.61E-04	1.11E+04	5.05E-08	not listed	No	not listed	No	N/A		No
dimethylphthalate	5.39E-04	1.02E+04	5.28E-08	not listed	No	not listed	No	2.27E+03	5.28E-08	No
eicosane	1.33E-04	8.29E+03	1.60E-08	not listed	No	not listed	No	N/A		No
ethylbenzene	3.12E-02	1.11E+04	2.81E-06	not listed	No	not listed	No	4.54E+02	2.81E-06	No
fluoranthene	8.80E-02	1.11E+04	7.93E-06	not listed	No	not listed	No	4.54E+01	7.93E-06	No
fluorene	6.25E-02	1.11E+04	5.63E-06	not listed	No	not listed	No	N/A		No
fluoride	8.59E+01	2.96E+02	2.90E-01	not listed	No	not listed	No	N/A		No
heptadecane,2,6,10,15-tatra	1.62E-03	8.29E+03	1.95E-07	not listed	No	not listed	No	N/A		No
hexachlorobenzene	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+00	5.28E-07	No
hexachlorobutadiene	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E-01	5.28E-07	No
hexachlorocyclopentadiene	5.39E-03	1.02E+04	5.28E-07	not listed	No	4.54E+01	No	4.54E+00	5.28E-07	No
hexachloroethane	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+01	5.28E-07	No
indeno(1,2,3-cd)pyrene	9.33E-03	9.93E+04	9.40E-08	not listed	No	not listed	No	4.54E+01	9.40E-08	No
iron	1.03E+06	9.93E+04	1.04E+01	not listed	No	not listed	No	N/A		No
isophorone	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	2.27E+03	5.28E-07	No
isopropyl alcohol/2-propanol	1.00E-03	1.25E+04	8.00E-08	not listed	No	not listed	No	N/A		No
kepone	2.76E-02	1.02E+05	2.71E-07	not listed	No	not listed	No	4.54E-01	2.71E-07	No
lead	5.45E+03	2.01E+04	2.71E-01	not listed	No	not listed	No	4.54E+00	2.71E-01	No
magnesium	3.85E+05	9.93E+04	3.88E+00	not listed	No	not listed	No	N/A		No
manganese	1.88E+04	9.93E+04	1.89E-01	not listed	No	not listed	No	N/A		No
mercury	1.38E+03	9.93E+04	1.39E-02	not listed	No	not listed	No	4.54E-01	1.39E-02	No
mesityl oxide	9.65E-03	8.29E+03	1.16E-06	not listed	No	not listed	No	N/A		No
methyl acetate	1.85E-04	1.11E+04	1.67E-08	not listed	No	not listed	No	N/A		No
methylene chloride	1.41E-02	1.02E+05	1.38E-07	not listed	No	not listed	No	4.54E+02	1.38E-07	No
molybdenum	1.55E+02	1.11E+04	1.40E-02	not listed	No	not listed	No	N/A		No
n-nitroso-di-n-propylamine	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	N/A		No
n-nitrosodiphenylamine	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+01	5.28E-07	No
naphthalene	1.34E-01	2.01E+04	6.67E-06	not listed	No	not listed	No	4.54E+01	6.67E-06	No
nickel	1.86E+03	9.93E+04	1.87E-02	not listed	No	not listed	No	4.54E+01	1.87E-02	No

Table 4. Chemical Comparison - SSSTF (cont d)

Chemical	Contaminant Mass (kg)	Waste Volume (m^3)	MAR (kg)	29 CFR 1910.119 TQ[1] (kg)	Exceed?	40 CFR 355 TPQ[2] (kg)	Exceed?	40 CFR 302.4 RQ[3] (kg)	40 CFR 302.4 Ratio	Exceed?
nitrate	6.34E+01	1.25E+04	5.07E-03	not listed	No	not listed	No	N/A		No
nitrate/nitrite-n	2.87E+01	2.67E+03	1.07E-02	not listed	No	not listed	No	N/A		No
nitrite	3.34E+00	1.25E+04	2.67E-04	not listed	No	not listed	No	N/A		No
nitrobenzene	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	4.54E+02	5.28E-07	No
octane,2,3,7-trimethyl	7.65E-05	1.11E+04	6.89E-09	not listed	No	not listed	No	N/A		No
o-toluenesulfonamide	2.38E-03	8.29E+03	2.87E-07	not listed	No	not listed	No	N/A		No
PCB	1.73E-03	8.29E+03	2.09E-07	not listed	No	not listed	No	4.54E-01	2.09E-07	No
pentachlorophenol	1.29E-02	1.02E+04	1.26E-06	not listed	No	not listed	No	4.54E+00	1.26E-06	No
phenanthrene	2.04E-01	1.11E+04	1.84E-05	not listed	No	not listed	No	2.27E+03	1.84E-05	No
phenol	1.60E-02	1.11E+04	1.44E-06	not listed	No	4.54E+03	No	4.54E+02	1.44E-06	No
phenol,2,6-bis(1,1-dimethyl)	1.73E-03	8.29E+03	2.09E-07	not listed	No	not listed	No	N/A		No
potassium	7.68E+04	9.93E+04	7.73E-01	not listed	No	not listed	No	N/A		No
pyrene	8.16E-02	1.11E+04	7.35E-06	not listed	No	4.54E+03	No	2.27E+03	7.35E-06	No
selenium	7.51E+01	9.93E+04	7.56E-04	not listed	No	not listed	No	4.54E+01	7.56E-04	No
silver	1.44E+03	9.93E+04	1.45E-02	not listed	No	not listed	No	4.54E+02	1.45E-02	No
sodium	1.97E+04	9.93E+04	1.98E-01	not listed	No	not listed	No	4.54E+00	1.98E-01	No
strontium	1.12E+03	1.11E+04	1.01E-01	not listed	No	not listed	No	N/A		No
sulfate	8.57E+00	2.96E+02	2.90E-02	not listed	No	not listed	No	N/A		No
sulfide	3.06E+05	1.11E+04	2.76E+01	not listed	No	not listed	No	N/A		No
TPH-diesel	1.24E+02	1.11E+04	1.12E-02	not listed	No	not listed	No	N/A		No
tetrachloroethene	3.65E-04	1.11E+04	3.29E-08	not listed	No	not listed	No	4.54E+01	3.29E-08	No
thallium	7.44E+01	1.11E+04	6.70E-03	not listed	No	not listed	No	4.54E+02	6.70E-03	No
toluene	1.06E-01	1.11E+04	9.55E-06	not listed	No	not listed	No	4.54E+02	9.55E-06	No
tributylphosphate	5.39E-03	1.02E+04	5.28E-07	not listed	No	not listed	No	N/A		No
trichloroethene	3.36E-03	2.01E+04	1.67E-07	not listed	No	not listed	No	4.54E+01	1.67E-07	No
undecane,4,6-dimethyl	7.65E-05	1.11E+04	6.89E-09	not listed	No	not listed	No	N/A		No
vanadium	2.14E+03	9.93E+04	2.16E-02	not listed	No	not listed	No	4.54E+02	2.16E-02	No
zinc	1.90E+04	1.11E+04	1.71E+00	not listed	No	not listed	No	4.54E+02	**1.71E+00**	**Yes**
zirconium	1.34E+03	1.11E+04	1.21E-01	not listed	No	not listed	No	N/A		No

1. TQ = Threshold Quantity
2. TPQ = Threshold Planning Quantity
3. RQ = Reportable Quantity

Table 5. Radiological Summary - IDW

Nuclide	CPP-28 MAR (Ci)	CPP-31 MAR (Ci)	Total MAR (Ci)	Cat 3 TQ (Ci)	Cat 3 TQ Ratio	40 CFR 302.4 RQ (Ci)	40 CFR 302.4 RQ Ratio
H-3	5.75E-02	6.29E-03	6.38E-02	1.60E+04	3.99E-06	1.00E+02	6.38E-04
Be-10	4.19E-09	3.07E-10	4.50E-09	1.04E+02	4.32E-11	1.00E+00	4.50E-09
C-14	1.67E-07	1.23E-08	1.79E-07	4.2E+02	4.27E-10	1.00E+01	1.79E-08
Se-79	6.08E-04	4.46E-05	6.53E-04	3.6E+02	1.81E-06	1.00E+01	6.53E-05
Rb-87	4.08E-08	2.99E-09	4.38E-08	6.00E+02	7.30E-11	1.00E+01	4.38E-09
Sr-90	5.11E+01	4.46E+00	5.56E+01	1.60E+01	**3.47E+00**	1.00E-01	**5.56E+02**
Y-90	5.11E+01	4.46E+00	5.56E+01	1.42E+03	3.91E-02	1.00E+01	**5.56E+00**
Zr-93	3.13E-03	2.30E-04	3.36E-03	6.2E+01	5.42E-05	1.00E+00	3.36E-03
Nb-93m	2.73E-03	1.89E-04	2.92E-03	2.00E+03	1.46E-06	1.00E+02	2.92E-05
Nb-94	3.23E-08	2.37E-09	3.47E-08	2.00E+02	1.73E-10	1.00E+01	3.47E-09
Tc-98	6.46E-10	5.06E-11	6.97E-10	4.40E+02	1.58E-12	1.00E+01	6.97E-11
Tc-99	2.12E-02	1.65E-03	2.29E-02	1.70E+03	1.34E-05	1.00E+01	2.29E-03
Rh-102	8.95E-10	4.42E-10	1.34E-09	2.80E+02	4.78E-12	1.00E+01	1.34E-10
Ru-106	5.85E-11	3.19E-10	3.78E-10	1.00E+02	3.78E-12	1.00E+00	3.78E-10
Pd-107	2.25E-05	1.64E-06	2.41E-05	4.20E+03	5.75E-09	1.00E+02	2.41E-07
Ag-108	1.21E-11	9.23E-13	1.30E-11	2.00E+02	6.51E-14	1.00E+01	1.30E-12
Ag-108m	1.30E-10	9.92E-12	1.40E-10	2.6E+02	5.38E-13	1.00E+01	1.40E-11
Cd-113m	2.13E-03	2.25E-04	2.36E-03	1.18E+01	2.00E-04	1.00E-01	2.36E-02
Sn-121m	2.28E-04	6.04E-06	2.34E-04	1.78E+03	1.31E-07	1.00E+01	2.34E-05
Sb-125	2.25E-04	8.82E-05	3.13E-04	1.20E+02	2.61E-06	1.00E+01	3.13E-05
Te-125m	5.49E-05	2.16E-05	7.65E-05	7.20E+02	1.06E-07	1.00E+01	7.65E-06
Sn-126	5.39E-04	3.95E-05	5.79E-04	1.70E+02	3.40E-06	1.00E+00	5.79E-04
Sb-126	7.55E-05	5.53E-06	8.10E-05	2.80E+02	2.89E-07	1.00E+01	8.10E-06
Sb-126m	5.39E-04	3.95E-05	5.79E-04	2.40E+04	2.41E-08	1.00E+03	5.79E-07
I-129	2.76E-06	4.11E-06	6.87E-06	6.00E-02	1.15E-04	1.00E-03	6.87E-03
Cs-134	1.15E-05	7.77E-06	1.93E-05	4.20E+01	4.59E-07	1.00E+00	1.93E-05
Cs-135	1.31E-04	9.61E-06	1.41E-04	4.20E+02	3.35E-07	1.00E+01	1.41E-05
Cs-137	5.59E+01	4.80E+00	6.07E+01	6.00E+01	**1.01E+00**	1.00E+00	**6.07E+01**
Ce-144	N/A	3.32E-12	3.32E-12	1.00E+02	3.32E-14	1.00E+00	3.32E-12
Pr-144	N/A	3.32E-12	3.32E-12	1.04E+06	3.19E-18	1.00E+03	3.32E-15
Pm-146	1.69E-06	2.92E-07	1.98E-06	4.20E+02	4.72E-09	1.00E+01	1.98E-07
Sm-146	3.85E-12	4.93E-13	4.34E-12	4.20E-01	1.03E-11	1.00E-02	4.34E-10
Pm-147	7.01E-03	3.02E-03	1.00E-02	1.00E+03	1.00E-05	1.00E+01	1.00E-03
Sm-147	1.50E-08	1.10E-09	1.61E-08	4.20E-01	3.83E-08	1.00E-02	1.61E-06
Eu-150	5.63E-10	4.80E-11	6.11E-10	4.00E+04	1.53E-14	1.00E+01	6.11E-11
Sm-151	1.06E+00	8.18E-02	1.14E+00	1.00E+03	1.14E-03	1.00E+01	1.14E-01
Eu-152	1.70E-04	1.79E-05	1.88E-04	2.00E+02	9.40E-07	1.00E+01	1.88E-05
Eu-154	4.50E-02	1.54E-03	4.65E-02	2.00E+02	2.33E-04	1.00E+01	4.65E-03
Eu-155	8.05E-03	7.17E-10	8.05E-03	9.40E+02	8.56E-06	1.00E+01	8.05E-04
Ho-166m	9.77E-09	1.02E-09	1.08E-08	7.20E+01	1.50E-10	1.00E+00	1.08E-08
Pb-209	4.78E-11	2.53E-11	7.31E-11	6.20E+05	1.18E-16	1.00E+03	7.31E-14
Pb-210	5.56E-09	6.07E-10	6.17E-09	3.60E-01	1.71E-08	1.00E-02	6.17E-07
Pb-211	3.29E-08	4.90E-09	3.78E-08	6.20E+03	6.10E-12	1.00E+02	3.78E-10
Pb-212	2.02E-08	1.93E-08	3.95E-08	3.20E+02	1.23E-10	1.00E+01	3.95E-09
Pb-214	1.25E-08	1.70E-09	1.42E-08	8.20E+03	1.73E-12	1.00E+02	1.42E-10
Bi-210	5.55E-09	6.04E-10	6.15E-09	3.20E+02	1.92E-11	1.00E+01	6.15E-10
Bi-212	2.02E-08	1.93E-08	3.95E-08	2.00E+03	1.98E-11	1.00E+02	3.95E-10
Bi-213	4.80E-11	2.53E-11	7.33E-11	3.20E+03	2.29E-14	1.00E+02	7.33E-13
Bi-214	1.25E-08	1.70E-09	1.42E-08	8.20E+03	1.73E-12	1.00E+02	1.42E-10
Po-210	5.43E-09	5.85E-10	6.02E-09	1.90E+00	3.17E-09	1.00E-02	6.02E-07
Rn-222	1.25E-08	1.70E-09	1.42E-08	1.00E+01	1.42E-09	1.00E-01	1.42E-07
Ra-223	3.29E-08	4.90E-09	3.78E-08	6.20E+01	6.10E-10	1.00E+00	3.78E-08
Ra-224	2.02E-08	1.93E-08	3.95E-08	2.00E+02	1.98E-10	1.00E+01	3.95E-09
Ra-225	4.80E-11	2.53E-11	7.33E-11	7.20E+01	1.02E-12	1.00E+00	7.33E-11
Ra-226	1.25E-08	2.63E-10	1.28E-08	1.20E+01	1.06E-09	1.00E+01	1.28E-09

Table 5. Radiological Summary - IDW (cont d)

Nuclide	CPP-28 MAR (Ci)	CPP-31 MAR (Ci)	Total MAR (Ci)	Cat 3 TQ (Ci)	Cat 3 TQ Ratio	40 CFR 302.4 RQ (Ci)	40 CFR 302.4 RQ Ratio
Ac-225	4.80E-11	2.53E-11	7.33E-11	3.20E+01	2.29E-12	1.00E+00	7.33E-11
Ac-227	3.29E-08	4.93E-09	3.78E-08	4.20E-02	9.01E-07	1.00E-03	3.78E-05
Th-227	1.39E-09	9.54E-10	2.34E-09	3.20E+01	7.33E-11	1.00E+00	2.34E-09
Th-228	2.02E-08	1.93E-08	3.95E-08	1.00E+00	3.95E-08	1.00E-02	3.95E-06
Th-229	4.80E-11	2.54E-11	7.34E-11	9.40E-02	7.81E-10	1.00E-03	7.34E-08
Th-230	7.04E-07	1.44E-07	8.48E-07	6.20E-01	1.37E-06	1.00E-02	8.48E-05
Th-231	1.72E-06	3.67E-06	5.39E-06	1.20E+04	4.49E-10	1.00E+02	5.39E-08
Th-234	1.49E-06	6.95E-07	2.19E-06	2.80E+03	7.80E-10	1.00E+02	2.19E-08
Pa-231	4.49E-08	8.50E-09	5.34E-08	2.00E-01	2.67E-07	1.00E-02	5.34E-06
Pa-233	6.26E-05	1.14E-04	1.77E-04	4.60E+03	3.84E-08	1.00E+02	1.77E-06
Pa-234	1.49E-06	6.95E-07	2.19E-06	1.52E+03	1.44E-09	1.00E+01	2.19E-07
U-232	1.96E-08	1.88E-08	3.84E-08	8.20E-01	4.68E-08	1.00E-02	3.84E-06
U-233	1.12E-08	1.50E-08	2.62E-08	4.20E+00	6.24E-09	1.00E-01	2.62E-07
U-234	7.91E-05	1.58E-04	2.37E-04	4.20E+00	5.65E-05	1.00E-01	2.37E-03
U-235	1.72E-06	3.67E-06	5.39E-06	4.20E+00	1.28E-06	1.00E-01	5.39E-05
U-236	3.32E-06	5.28E-06	8.60E-06	4.20E+00	2.05E-06	1.00E-01	8.60E-05
U-238	1.49E-06	6.95E-07	2.19E-06	4.20E+00	5.20E-07	1.00E-01	2.19E-05
Np-236	9.97E-11	1.82E-10	2.82E-10	2.40E+00	1.17E-10	1.00E-01	2.82E-09
Np-237	6.26E-05	1.14E-04	1.77E-04	4.20E-01	4.20E-04	1.00E-02	1.77E-02
Np-238	4.56E-10	1.34E-09	1.80E-09	1.30E+03	1.38E-12	1.00E+01	1.80E-10
Np-239	7.92E-07	2.20E-06	2.99E-06	7.80E+03	3.84E-10	1.00E+02	2.99E-08
Pu-236	4.06E-11	2.31E-10	2.72E-10	2.00E+00	1.36E-10	1.00E-01	2.72E-09
Pu-238	1.36E-02	1.35E-02	2.71E-02	6.2E-01	4.37E-02	1.00E-02	**2.71E+00**
Pu-239	8.61E-03	8.41E-03	1.70E-02	5.2E-01	3.27E-02	1.00E-02	**1.70E+00**
Pu-240	5.22E-03	3.07E-03	8.29E-03	5.20E-01	1.59E-02	1.00E-02	8.29E-01
Pu-241	1.34E-01	1.84E-01	3.18E-01	3.20E+01	9.94E-03	1.00E+00	3.18E-01
Pu-242	1.01E-05	2.46E-06	1.26E-05	6.20E-01	2.03E-05	1.00E-02	1.26E-03
Am-241	3.09E-02	3.13E-02	6.22E-02	5.20E-01	1.20E-01	1.00E-02	**6.22E+00**
Am-242m	9.47E-08	2.78E-07	3.73E-07	5.20E-01	7.17E-07	1.00E-02	3.73E-05
Am-242	9.51E-08	2.79E-07	3.74E-07	8.20E+03	4.56E-11	1.00E+02	3.74E-09
Am-243	7.92E-07	2.20E-06	2.99E-06	5.20E-01	5.75E-06	1.00E-02	2.99E-04
Cm-243	7.28E-11	2.22E-10	2.95E-10	8.20E-01	3.60E-10	1.00E-02	2.95E-08
Cm-244	2.55E-08	9.16E-08	1.17E-07	1.04E+00	1.13E-07	1.00E-02	1.17E-05
Cm-245	N/A	7.05E-12	7.05E-12	5.20E-01	1.36E-11	1.00E-02	7.05E-10

Table 6. Chemical Comparison - IDW

Chemical	CPP-28 Contaminant Mass (kg)	CPP-31 Contaminant Mass (kg)	Total MAR (kg)	29 CFR 1910.119 TQ[1] (kg)	Exceed?	40 CFR 355 TPQ[2] (kg)	Exceed?	40 CFR 302.4 RQ[3] (kg)	40 CFR 302.4 Ratio	Exceed?
aluminum	5.29E+00	9.47E-01	6.23E+00	not listed	No	not listed	No	N/A		No
boron	2.57E-01	2.85E-02	2.86E-01	not listed	No	not listed	No	N/A		No
cadmium	4.29E-01	8.21E-02	5.11E-01	not listed	No	not listed	No	4.54E+00	1.12E-01	No
calcium	1.23E-01	2.98E-01	4.21E-01	not listed	No	not listed	No	N/A		No
chromium	3.00E-01	2.18E-02	3.22E-01	not listed	No	not listed	No	2.27E+03	1.42E-04	No
cobalt	3.86E-01	6.13E-01	9.98E-01	not listed	No	not listed	No	N/A		No
copper	9.86E-02	8.37E-02	1.82E-01	not listed	No	not listed	No	2.27E+03	8.03E-05	No
iron	1.21E-01	1.09E-01	2.30E-01	not listed	No	not listed	No	N/A		No
lead	2.43E-01	3.51E-02	2.78E-01	not listed	No	not listed	No	4.54E+00	6.12E-02	No
magnesium	3.86E-01	6.13E-01	9.98E-01	not listed	No	not listed	No	N/A		No
manganese	1.39E-01	1.19E-01	2.57E-01	not listed	No	not listed	No	N/A		No
mercury	6.86E-01	1.67E-02	7.02E-01	not listed	No	not listed	No	4.54E-01	**1.55E+00**	**Yes**
molybdenum	5.29E-02	8.37E-03	6.12E-02	not listed	No	not listed	No	N/A		No
nickel	8.86E-02	1.17E-02	1.00E-01	not listed	No	not listed	No	4.54E+01	2.21E-03	No
potassium	3.71E-01	7.20E-01	1.09E+00	not listed	No	not listed	No	N/A		No
silicon	9.00E-02	8.37E-02	1.74E-01	not listed	No	not listed	No	4.54E+00	3.83E-02	No
sodium	2.14E+00	3.19E+00	5.33E+00	not listed	No	not listed	No	4.54E+00	**1.17E+00**	**Yes**
tin	1.39E+00	8.37E-02	1.47E+00	not listed	No	not listed	No	N/A		No
titanium	3.00E-02	8.37E-02	1.14E-01	not listed	No	not listed	No	N/A		No
vanadium	3.00E-02	8.37E-02	1.14E-01	not listed	No	not listed	No	N/A		No
zirconium	4.71E+00	1.53E-01	4.87E+00	not listed	No	not listed	No	N/A		No
chloride	7.57E-03	4.52E-02	5.27E-02	not listed	No	not listed	No	N/A		No
fluoride	7.00E+00	2.54E-01	7.25E+00	not listed	No	not listed	No	N/A		No
nitrate	5.57E+01	3.35E+01	8.92E+01	not listed	No	not listed	No	N/A		No
phosphate	2.00E-01	9.76E-02	2.98E-01	not listed	No	not listed	No	N/A		No
sulfate	6.00E-01	6.44E-01	1.24E+00	not listed	No	not listed	No	N/A		No

1. TQ = Threshold Quantity
2. TPQ = Threshold Planning Quantity
3. RQ = Reportable Quantity

5. REFERENCES

1. DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports,* Change Notice No. 1, U.S. Department of Energy, September 1997.

2. DOE-EM-STD-5502-94, *Hazard Baseline Documentation*, U.S. Department of Energy, August 1994.

3. DOE-ID N 420.A1, *Safety Basis Review and Approval Process*, U.S. Department of Energy, Idaho Operations Office, May 1998.

4. MCP-2451, *Safety Analysis for Other Than Nuclear Facilities*, current revision.

5. Code of Federal Regulations, Title 40, Protection of Environment, Part 302, Designation, Reportable Quantities, and Notification.

6. Code of Federal Regulations, Title 29, Labor, Part1910.119, Process Safety Management of Highly Hazardous Chemicals.

7. Code of Federal Regulations, Title 40, Protection of Environment, Part 355, Appendix A, The List of Extremely Hazardous Substances and Their Threshold Planning Quantities.

8. Los Alamos National Laboratory, *Table of DOE-STD-1027-92 Hazard Category 3 Threshold Quantities for the ICRP-30 List of 757 Radionuclides*, LA-12981-MS, August 1995.

9. DOE Order 5481.1B, *Safety Analysis and Review System*, Change 1, U.S. Department of Energy, May 1987.

10. Department of Energy, Idaho Operations Office, *CERCLA Waste Inventory Database Report for the Operable Unit 3-13 Waste Disposal Complex (Draft).* DOE/ID-10803, Revision B, September 2000.

11. Engineering Design File, EDF-ER-124, *INTEC Group 4 Perched Water Monitoring Well Drilling Hazard Classification,* January 2000.

12. Engineering Design File, EDF-ER-076, *INTEC Groundwater Monitoring Well Drilling Hazard Classification,* August 1999.